

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of: **NISHIDE, Takuji et al.**

Group Art Unit: **3763**

Serial No.: **10/576,534**

Examiner: **HOLLOWAY, Ian K.**

Filed: **April 9, 2007**

P.T.O. Confirmation No.: **3794**

FOR: ASPIRATION CATHETER

AMENDMENT UNDER 37 CFR 1.111

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

February 2, 2011

Sir:

In response to the Office Action dated **October 17, 2011**, extended from **January 17, 2012** to **February 17, 2012** by a one-month Petition for Extension of Time, please amend the above-referenced application as follows:

Listing of the Claims begin on page 2 of this paper.

Remarks begin on page 7 of this paper.

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Previously Presented): An aspiration catheter for removing by aspiration a substance from a living body comprising:

a main shaft including a distal shaft and a proximal shaft, wherein an aspiration lumen for removing the substance by aspiration is disposed in the distal shaft and the proximal shaft;

a guidewire shaft disposed at the distal region of the distal shaft, the guidewire shaft having a guidewire lumen into which a guidewire is insertable, the guidewire lumen being disposed in the guidewire shaft;

a hub provided at the proximal end of the proximal shaft, the aspiration lumen extending to the hub; and

a detachable core wire disposed in the aspiration lumen,

wherein the relationship $0.4 \leq R1/R2 \leq 0.7$ is satisfied, wherein R1 is a maximum outer diameter of the core wire, and R2 is a minimum inner diameter of the aspiration lumen located on the distal side of the hub, and

wherein the distal end of the core wire recedes from the distal end of the aspiration lumen in the proximal direction.

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Claim 2 (Original): The aspiration catheter according to claim 1, wherein a connector is fixed on the proximal end of the core wire, and the connector is mounted to the proximal end of the hub in a detachable manner.

Claim 3 (Original): The aspiration catheter according to claim 2, wherein the interior of the aspiration lumen can be flushed through the connector with the connector being mounted to the proximal end of the hub in a detachable manner.

Claim 4 (Canceled)

Claim 5 (Canceled)

Claim 6 (Canceled)

Claim 7 (Previously Presented): The aspiration catheter according to claim 1, wherein the core wire is a spring wire comprising a coiled metal wire.

Claim 8 (Previously Presented): The aspiration catheter according to claim 1, wherein at least a portion of the core wire has a tapered shape in which the outer diameter becomes larger toward the proximal end.

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Claim 9 (Previously Presented): The aspiration catheter according to claim 1, wherein at least a portion of the core wire has flexibility which becomes higher toward the distal end.

Claim 10 (Previously Presented): The aspiration catheter according to claim 1, wherein the core wire comprises stainless steel, a Co--Cr alloy, an Ni--Ti alloy, an Ni--Ti--Fe alloy, an Ni--Ti--Cu alloy, an Ni--Ti--Cr alloy, an Ni--Ti--V alloy, an Ni--Ti--Co alloy, an Ni--Ti--Nb alloy, an Ni--Ti--Pd alloy, an Ni--Ti--Cu--Cr alloy, or a composite thereof.

Claim 11 (Previously Presented): The aspiration catheter according to claim 1, wherein the tip of the distal shaft is obliquely cut, the distal end of the guidewire shaft is positioned at the obliquely cut distal end of the distal shaft or protrudes from the distal end of the distal shaft in the distal direction, and the relationship $0.5 \leq L2/L1$ is satisfied, wherein L1 is the length of the obliquely cut portion of the distal shaft in the longitudinal direction of the catheter, and L2 is the length from the proximal end of the guidewire shaft to the distal end of the distal shaft.

Claim 12 (Original): The aspiration catheter according to claim 11, wherein the relationship $2 \text{ mm} \leq L1 \leq 10 \text{ mm}$ is satisfied.

Claim 13 (Previously Presented): The aspiration catheter according to claim 1, wherein the guidewire shaft is provided with a radiopaque marker.

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Claim 14 (Previously Presented): The aspiration catheter according to claim 1, wherein the proximal shaft comprises a polyimide.

Claim 15 (Previously Presented): The aspiration catheter according to claim 1, wherein the proximal shaft comprises a braided tube in which a metal braid and a polymer material are combined.

Claim 16 (Original): The aspiration catheter according to claim 15, wherein the braided tube comprises an inner layer defining the aspiration lumen, a metal braid disposed on the outer surface of the inner layer, and an outer layer disposed on the outer surface of the metal braid.

Claim 17 (Previously Presented): The aspiration catheter according to claim 1, wherein at least a proximal portion of the proximal shaft has a flexural modulus of 1 GPa or more.

Claim 18 (Previously Presented): The aspiration catheter according to claim 1, wherein at least a portion of the distal shaft is applied with a hydrophilic coating that exhibits a lubricating property in a wet environment.

Claim 19 (Previously Presented): A method for using the aspiration catheter according to claim 1, the method comprising the steps of inserting the aspiration catheter into a living body with

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the core wire being present in the aspiration lumen, then withdrawing the core wire, and applying a negative pressure to the aspiration lumen to remove by aspiration a substance from the living body.

Claim 20 (Previously Presented): The aspiration catheter according to Claim 1, wherein the core wire is the one with a straight shape.

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REMARKS

It is believed that this Amendment is fully responsive to the Office Action dated October 17, 2011.

Claims 1-3 and 7-9 are rejected under 35 U.S.C. §103(a) as being unpatentable over Douk (U.S. Published Application 2005/0027236) in view of Gay et al. (U.S. Patent No. 5,047,018), and Schwager (U.S. Published Application 2001/0007922); Claims 10-17 and 19-20 are rejected under 35 U.S.C. §103(a) as being unpatentable over Douk, Schwager, and Gay in view of Noriega et al. (U.S. Published Application No. 2005/0119615); and Claim 18 is rejected under 35 U.S.C. §103(a) as being unpatentable over Douk, Gay et al., Schwager, and Noriega et al in view of Ha et al. (U.S. Patent No. 6,159,195). Reconsideration and removal of these rejections are respectfully requested.

Regarding the rejection of method Claim 19, the Office Action alleges that Douk teaches inserting the aspiration catheter of Douk with a core wire being present in the aspiration lumen. The aspiration catheter of Douk is disclosed as using a guidewire. It is respectfully submitted that it is not found in paragraphs 45-47 of Douk to also use a core wire at the same time as using a guide wire, as in the present claimed invention.

In view of the above remarks, removal of the rejection of Claim 19 is respectfully requested.

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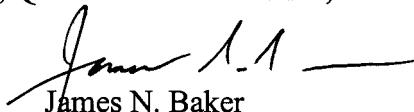
In view of the aforementioned remarks, Claims 1-4 and 7-20 are believed to be patentable and in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the Applicants' undersigned Agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, the Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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Enclosure: Petition for Extension of Time